

Memorandum of Understanding between
The United States Environmental Protection Agency
and
FIELD(Company_1)

I. Common Agreements and Principles

A. This is a voluntary agreement between *FIELD(Company_1)* ("ENERGY STAR[®] Residential Light Fixture Partner" or "Partner") and the United States Environmental Protection Agency (EPA), by which *FIELD(Company_1)* joins the ENERGY STAR Residential Light Fixture Program. The terms of this Memorandum of Understanding (MOU) shall apply to residential Light Fixtures sold by Partner under its own brand name(s).

B. Partner and EPA agree that the primary purpose of the ENERGY STAR Residential Light Fixture Program is to promote the manufacturing and marketing of energy-efficient equipment, thereby potentially reducing combustion-related pollution.

C. Partner and EPA agree that the use of energy-efficient equipment may also increase profits and competitiveness.

D. Partner and EPA agree that publicizing the ENERGY STAR Residential Light Fixture Program is important to demonstrate the following: the concern of Partner for the environment, the vitality of the free enterprise system in reducing costs, and the capability of partnership programs to achieve environmental goals.

E. Partner and EPA agree that maintaining public confidence in the ENERGY STAR Residential Light Fixture Program is critical to achieving the shared goals of Partner and EPA.

F. Partner and EPA agree that membership in the ENERGY STAR Residential Light Fixture Program is essential to the cooperative effort to achieve the shared goals stated above.

ENERGY STAR is a registered mark.

II. Definitions

A. Light Fixture: A complete lighting unit consisting of a lamp or lamps and ballasting (when applicable) together with the parts designed to distribute the light, to position and protect the lamps and to connect the lamps to the power supply. In the industry, this is commonly defined as a luminaire. For the purposes of this MOU, Light Fixtures will be qualified including the recommended lamp or light source although the fixtures are not necessarily packaged with the light source. Light Fixture includes both fixtures hard-wired into the electrical system and portable fixtures that utilize a two prong polarized or three prong plug to connect to an electrical socket. Light Fixtures that utilize a ballast shall have the ballast hardwired to the fixture. Light Fixtures shall permit users to replace lamp(s) on burnout.

B. Lamp: A generic term for a manufactured source of light. By extension, the term is also used to denote sources that radiate in regions of the spectrum adjacent to the visible.

C. Ballast: A device used with an electric-discharge lamp to obtain the necessary circuit conditions (voltage, current and waveform) for starting and operating.

D. Residential Light Fixture: For the purposes of this MOU, a Residential Light Fixture is a Light Fixture used primarily, although not exclusively, in the home. These fixtures can also be found in hotels, public or military housing, universities and some light-commercial applications.

E. NFPA: The National Fire Protection Association (United States) develops the National Electric Code (NEC).

F. Input Power: The total power used by the Light Fixture when operating, measured in watts (W). For Light Fixtures without ballasts, input power is the sum of the wattage of all the lamps within the fixture as published by the lamp manufacturers. For Light Fixtures with ballasts, the input power is the input watts of all the lamps and ballasts in the fixture, as reported by the lamp and ballast manufacturers.

G. System Efficacy: The total initial lumens of all lamps in a Light Fixture, as published by the lamp manufacturer, multiplied by the ballast factor, as published by the ballast manufacturer, divided by the Input Power of the Light Fixture. System efficacy is measured in lumens per watt (lpw).

H. Fixture Efficiency: The ratio of luminous flux (lumens) emitted by a Light Fixture to that emitted by the lamp or lamps used therein.

III. Effective Date of MOU and Duration

A. This MOU shall be effective when signed by both EPA and Partner.

B. Both parties agree that Partner may begin to qualify Residential Light Fixtures pursuant to section IV.B., below, beginning on May 30, 1999.

C. Both parties agree that the terms of this MOU shall govern its implementation until December 31, 2000. Both parties agree that on or before December 1, 2000 this MOU shall be modified and the modification signed by both EPA and Partner in order to extend the Program into a third phase.

D. Both parties agree that this agreement can be terminated by Partner or EPA at any time, and for any reason, with no penalty. However, both parties agree that termination for noncompliance would only occur in accordance with the procedures of Section VI., below.

IV. ENERGY STAR Residential Light Fixture Partner's Responsibilities

A. Partner agrees to appoint a responsible representative of the company as liaison with EPA for the ENERGY STAR Residential Light Fixture Program and to notify EPA within one month of any change in liaison designation.

B. Product Qualification for the EPA ENERGY STAR Logo

Partner agrees to introduce one or more specific Residential Light Fixtures, either indoor, outdoor or both, that meet the specifications outlined below:

1. Indoor Fixtures: Fixtures intended for indoor use must meet the performance specifications in Table 1.

Table 1 - Indoor Fixtures

Energy Efficiency (including ballast)	Performance Specifications: Lumens per watt
All Lamp Types ¹ below 20 watts input power (all lamp types)	≥ 50
20 to 29 watts input power (all lamp types)	≥ 55
≥ 30 watts input power including the following lamp types: circular, pin-based CFLs, other non linear lamps and linear lamps ≤ 24 inches.	≥ 60
Linear Lamps ≥ 30 watts input power ≥ 24 inches	≥ 70
Power Characteristics: Power factor Current crest factor Electromagnetic and Radio Frequency Interference	≥ 0.5 ≤ 1.7 (For fixtures shipped without lamps) Comply with FCC 47 CFR Part 18.305 and 18.307

¹ Initial lamp lumens from manufacturer's literature, derated by the ballast factor for the ballast used in the light fixture, yielding lamp/ballast system efficacy.

Operating Characteristics	Performance Specifications
<p>Lamp Start</p> <p>Light Quality</p> <p>Dimming</p> <p>Noise</p>	<p>Lamp must continuously illuminate within one second of being switched on. For manufacturers using magnetic ballasts and quick start lamps, lamps <u>must</u> be included with fixtures when shipped from factory.</p> <p>Color Rendering Index (CRI) of at least 80 for compact fluorescent lamps (lamp diameter smaller than 3/4 inch), and a CRI of at least 70 for all other lamps.²</p> <p>Free standing "torchiere style" portable light fixtures with input power of 22 watts or more shall be dimmable from 100% to 30% or less of maximum output, or be switchable to three levels of brightness with included switch. This requirement does not apply to lamps intended for bedsides, table tops, or plug in fixtures that are then mounted with screws or otherwise permanently affixed to one location.</p> <p>Ballasts if included must have sound rating of Class A or quieter.</p>
Reliability/ Durability	
<p>Warranty for defects in material and manufacturing</p> <p>Longevity</p>	<p>Repair or replacement of defective parts of the fixture housing or electronics (except lamp) for 2 years from the date of purchase. Written warranty must be included with fixture when purchased.</p> <p>Lenses or diffusers shall be constructed of glass or UV-stable optical grade plastics and be heat stable. Reflectors, if included, shall be UV resistant and heat stable. Must comply with ANSI/IEEE C62.41 specifications for withstanding electrical transients.</p>
<p>Safety</p>	<p>Fixtures must be tested and listed by UL, ETL, CSA or other independent agency acceptable for compliance with NFPA 70, National Electric Code.</p> <p>Ballasts shall be Class P thermally protected.</p>

² If the lamp is not included in the fixture package, see Section IV.D.1.

2. Outdoor Fixtures: Fixtures intended for outdoor use may be qualified under either Table 2A: Light Source or Table 2B: Operating Time:

Table 2A - Outdoor Fixtures: Light Source

Energy Efficiency Characteristics	Performance Specifications
Maximum input power	150 watts
System Efficacy (Lumens per watt) up to 70 watts 71 to 150 watts	≥ 40 Lumens per watt ≥ 50 Lumens per watt
Mechanical	Lamp holder will operate only lamps that perform to the input power range of the fixture.
Operating Characteristics	
Re-set	Resets automatically to automatic mode within 24 hours of a manual override or testing operation.
Shut-off	Automatic shut-off during daylight hours
Reliability	
Warranty for defects in materials and manufacturing	Repair or replacement of defective parts of the fixture housing or electronics (except lamp) for 2 years from the date of purchase. Written warranty must be included with fixture when purchased.
Safety	
	Fixtures must be tested and listed by UL, ETL, CSA or other independent agency acceptable for compliance with NFPA 70, National Electric Code including listing for damp or wet locations (Articles 410-4a and Article 100).

Table 2B - Outdoor Fixtures: Operating Time

Energy Efficiency Characteristics	Performance Specifications
Maximum input power	250 watts
Shut-off	Automatic shut-off during daylight hours; and automatic shut-off within a maximum of 15 minutes of either a manual on signal, or no motion in the fixture's field of view.
Operating Characteristics	
Re-set	Resets automatically to automatic mode within 24 hours of a manual override or testing operation.
Lamp start	Lamp must continuously illuminate within 1 second of being switched on. For manufacturers using magnetic ballasts and quick start lamps, lamps <u>must</u> be included with fixtures when shipped from factory.
Reliability	
Warranty for defects in materials and manufacturing	Repair or replacement of defective parts of the fixture housing or electronics (except lamp) for 2 years from the date of purchase. Written warranty must be included with fixture when purchased.
Safety	
	Fixtures must be tested and listed by UL, ETL, CSA or other independent agency acceptable for compliance with NFPA 70, National Electric Code including listing for damp or wet locations (Articles 410-4a and Article 100).

C. Testing:

Partner agrees to perform tests, or obtain tests results from suppliers, as necessary, to determine compliance with the program specifications. Based on the results of these tests, Partner shall self-certify those fixtures that it determines are compliant with the specifications outlined above. Partner agrees to submit a self-certification form upon signing the MOU, see Attachment B.

1. Testing methods:

The overall goal of the testing requirement is to ensure that product performance, quality standards, and compliance with specifications is maintained. The Program will continue to be self certifying, however, a self certification form will now be required as evidence of compliance. EPA will not specify tests or test facilities, however manufacturers are expected to use industry standard tests and qualified test facilities.

2. Lamp - Ballast Combinations

Where manufacturers use the same lamp or ballast combinations in different fixtures only a single set of test results will be required.

3. Tests results required

Self certification for compliance with tests is contained in Appendix B.

D. Customer Education

1. Product Literature:

Partner shall provide general information to end users regarding the benefits of energy efficiency and energy-efficient residential fixtures. This information might include a description of the ENERGY STAR Residential Light Fixture Program and a discussion of the energy savings associated with the product. This might also include total lamp watt rating, total initial lumen rating, estimated lamp life, estimated ballast life and total energy costs. Partner may determine the best manner through which to disseminate this general information to users. Examples of acceptable approaches include: special brochures provided with qualified fixtures, sales literature, point of purchase displays, information in specification sheets, maintenance information, savings comparisons, etc. Brochures and advertisements shall be worded to avoid misleading interpretations. When using the ENERGY STAR Logo, Partner will comply with Logo Guidelines as shown in Section F below.

ENERGY STAR fixtures may be packaged with the appropriate lamp that satisfies the requirements listed in PART IV. If the Partner chooses not to include the lamp then the Partner shall note the appropriate generic lamp descriptors, including: lamp diameter, length, wattage, CRI, and base type both on the exterior packaging *and* in either included installation instructions or application information sent to specifiers.

a. Indoor Fixtures: For fluorescent indoor fixtures sold at retail directly to the end user without a lamp included, the following additional guidance (or similar graphic or text approved by EPA Program Manager) shall appear on the exterior of the packaging:

"Color rendering index (CRI) and color temperature are two important characteristics of fluorescent bulbs. For best color rendering, buy a bulb with a CRI of 70 or greater. The color temperature usually appears as the last two digits of the bulb's model number. If you prefer warmer light, chose a model number ending in 30 or less. For cooler light, chose a number greater than 30."

b. Outdoor Fixtures: For outdoor fixtures, Partners must include on the exterior packaging *or* in either included installation instructions or application information sent to specifiers the specific recommended locations and appropriate use for the product, cold weather cautions shown graphically, and cautions for lamps with warm-up or restart time of more than 3

seconds. If a motion sensor is used, Partner will include instructions on adjustment, coverage, types of motion detected, and how to avoid extraneous signals.

2. Logo Use:

To help consumers become familiar with the ENERGY STAR Residential Light Fixture Program, the Partner shall place the ENERGY STAR logo onto the packaging of qualified models, and on the models themselves, where practical, e.g., on the nameplate. The Partner shall also strive to include the ENERGY STAR logo in brochures, manuals, and advertisements, etc. for qualified models.

E. Training

Partner agrees to provide information about the ENERGY STAR Residential Light Fixture Program to all of its employees whose jobs are relevant to the development, marketing, sales, and service of ENERGY STAR Residential Light Fixture products.

Partner shall provide training materials for its product dealers and distributors. Materials shall describe the ENERGY STAR Residential Light Fixture Program and the Partner's participation in the Program, provide information about energy-efficient Residential Light Fixtures as well as cost and maintenance savings, and identify models that comply with the ENERGY STAR Residential Light Fixture specifications. Materials may include specification sheets, point of purchase displays, informational fact sheets, demonstration models, etc.

F. Proper Use of the ENERGY STAR Logo and Name

1. Partner understands that participation in the EPA ENERGY STAR Residential Light Fixture Program does not constitute EPA endorsement of Partner or its products.
2. Partner agrees that ENERGY STAR and the ENERGY STAR logo are marks of the United States Government as represented by the Administrator of EPA, and are subject to the provisions of Title 15, Chapter 22, United States Code, the various state laws applicable to trademarks, and this Memorandum of Understanding.
3. It is the responsibility of the Partner to associate EPA, the ENERGY STAR logo, the ENERGY STAR name, and the ENERGY STAR Residential Light Fixture Program only with those specific models that qualify under the terms and conditions of this MOU. See EPA's Logo Usage Guidelines for more details and specific examples.
4. When the ENERGY STAR logo is used, Partner agrees that it shall be accompanied by the following statement: "As an ENERGY STAR® Partner, *FIELD(Company_1)* has determined that this Light Fixture meets the ENERGY STAR® guidelines for energy efficiency." When the ENERGY STAR logo is applied directly to the product or packaging, Partner may place this statement in the user's manual.

5. EPA agrees to accept test data as submitted by Partner, whether it is self-determined or determined by an independent third party. EPA will not officially approve any individual test reports voluntarily submitted by Partner. Therefore, Partner shall not include misleading statements in product literature that imply a product is approved or certified by the EPA, i.e., Partner shall not make claims such as "this Light Fixture is EPA approved," or "this Light Fixture is EPA certified."
6. Partner shall not utilize the logo in a manner that directly or otherwise implies EPA endorsement of the Partner or of Partner's products.
7. Partner agrees not to alter the ENERGY STAR logo.
8. If either EPA or Partner terminates this Agreement, Partner will no longer be entitled to apply the ENERGY STAR logo to newly manufactured products, and will no longer make reference to the ENERGY STAR Residential Light Fixture Program so as to convey continuing involvement in the Program.

V. EPA's Responsibilities

- A. EPA agrees to designate a single liaison point for the EPA ENERGY STAR Residential Light Fixture Program (i.e., ENERGY STAR Program Manager), and to notify Partner within one month of any change in liaison designation. Please send signed MOU and other correspondence to this person. (See Attachment A.)
- B. While this is a self-certifying process, EPA reserves the right to conduct tests on models bearing the EPA ENERGY STAR logo from either the open market or other available sources, or voluntarily received from Partner. See Section VI for procedures to address fixtures found to be non-compliant.
- C. EPA agrees to make an effort to encourage consumer acceptance of models introduced under this agreement and bearing the ENERGY STAR logo. EPA shall keep a product listing of compliant models and provide it to the public upon request in hard copy, on disk, and electronically on the World Wide Web.
- D. EPA agrees to provide Partner with recognition for its public service in protecting the environment by performing analyses about the pollution prevented by corporate participants, and providing this and other program information to appropriate news media sources for publication.
- E. EPA agrees to promote energy-efficient equipment, and to inform consumers about the ENERGY STAR Residential Light Fixture Program and ENERGY STAR logo by writing articles and/or cooperating with the news media by sharing information, where appropriate.
- F. EPA agrees to work with Partner independently and/or in conjunction with other Partners to coordinate the placement of advertisements to promote energy-efficient equipment, educate

consumers about the ENERGY STAR Residential Light Fixture Program and logo, and provide Partner with due recognition for its public service in protecting the environment.

G. EPA agrees to loan Partner, at no charge, materials from which Partner can reproduce the ENERGY STAR logo.

VI. Conflict Resolution

A. Each party agrees to exercise good faith as a general principle for resolving conflicts under the EPA ENERGY STAR Residential Light Fixture Program.

B. Both parties agree to informally notify each other if any problems or issues arise and to work together to provide maximum public confidence in the Program.

C. Procedure for Addressing Noncompliant Products

1. If EPA receives information that one or more models certified by Partner as ENERGY STAR compliant may not meet all of the conditions of this MOU, then EPA will immediately notify Partner and attempt to address and resolve the problem informally.

2. If these informal discussions do not produce a mutually agreeable resolution, EPA shall notify Partner in writing that Partner shall be terminated from the Program unless it undertakes the specific corrective actions sought by EPA. Partner agrees to reply to EPA in writing within 20 business days of receiving EPA's letter. At that time, Partner shall agree to do one of the following: (a) undertake in a timely and effective manner, the corrective actions sought by EPA; or (b) voluntarily terminate this agreement. If Partner does not respond to EPA's letter within 20 business days, or does not agree to either (a) or (b), then this agreement is terminated.

D. If Partner believes that EPA is not meeting all of its commitments, Partner agrees to formally notify EPA in writing. EPA agrees to respond in writing within 20 business days of receiving Partner's letter. At that time, EPA will do one of the following: (a) undertake the corrective actions sought by Partner; or (b) explain why such corrective actions can not be undertaken.

VII. Freedom of Information Act and Confidential Business Information

Both parties understand that information provided by Partner to EPA will be treated in accordance with EPA's public information regulations under 40 Code of Federal Regulations, Part Two.

* * * * *

The undersigned hereby execute this Memorandum of Understanding on behalf of their parties.
The signer of this agreement affirms that he/she has the authority to commit Partner to participation in the ENERGY STAR Residential Light Fixture Program.

For the U.S. Environmental Protection Agency (EPA):

Signature: _____ Date: _____

Name: Paul M. Stolpman

Title: Director, Office of Atmospheric Programs

For *FIELD*(Company_1):

Signature: _____ Date: _____

Name: _____

Title: _____

ATTACHMENT A

Please complete and return with the signed Memorandum of Understanding.

EPA Contact:

Peter Banwell, Program Manager
ENERGY STAR Residential Light
Fixture Program
US EPA (MC: 6202N)
401 M Street, SW
Washington, DC 20460

Overnight Delivery Address:

Peter Banwell, Program Manager
ENERGY STAR Residential Light
Fixture Program
800 N. Capitol St., Suite 580
Washington, DC 20002
(202) 564 - 9408

FIELD(Company 1)'s Contacts:

Primary Contact (To receive all materials):

Name:
Title:
Address:
City, State, ZIP:
Telephone Number:
Fax Number:
E-mail Address:
Location of US Headquarters (if applicable):

Marketing/PR Contact (To receive marketing and communications materials):

Name:
Title:
Address:
City, State, ZIP:
Telephone Number:
Fax Number:
E-mail Address:
Location of US Headquarters (if applicable):

Switchboard or main sales phone number (To be given to the public for further information on your products):_____

Telephone number:
Fax Number:

ATTACHMENT B SELF-CERTIFICATION FORM

Company Name: _____

Contact Number for Public Requesting Product Information: _____

Fixture Model Number(s)	Brand	Fixture Type ¹	Initial lamp lumens ²	Ballast type ³	Ballast Losses (watts)	Listed lamp watts ⁴	Efficacy ⁵ (Lumens per watt)	Lamp start type/ time ⁶	Current Crest Factor	Power Factor	FCC certificate ⁷ (number)	Warranty length (years)	Intended Location/ Application (e.g. room type, porch, garage, etc.)

¹ Fixture types:

CM = Ceiling Mounted
WM = Wall Mounted
SU = Suspended

RE = Recessed
AR = Architectural
PT = Portable

FC = Furniture or Cabinet Integrated
OD = Outdoor

² As reported by the manufacturer.

³ Ballasts shall be reported as magnetic, electronic, or hybrid.

⁴ As reported by manufacturer.

⁵ Efficacy shall be calculated as follows: $\frac{\text{Published initial lamp lumens} \times \text{ballast factor (divided by)}}{\text{Input power of fixture}}$

⁶ Instant start, rapid start, etc (must be less than one second for indoor fixtures (Table 1) and outdoor fixtures under Table 2B).

⁷ FCC certificates for consumer products are given to ballasts that meet radio frequency and electromagnetic interference guidelines.